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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,131	05/11/2001	Manfred Jordan	14611Z	7430

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EXAMINER	
LEADER, WILLIAM T	

7

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 10/06/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/854,131	JORDAN ET AL.	
	Examiner	Art Unit	
	William T. Leader	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-14 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-14 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (4,168,223) in view of Wehlage et al (5,951,841) and Okuhama et al (6,183,545).

4. The Igarashi et al patent is directed to a solution for electrodepositing tin or tin alloys. A basic tin-zinc alloy bath is shown in example 2. The bath contains

$SnSO_4$ and $ZnSO_4$ which provide Zn(II) ions and Sn(II) ions as recited in instant claims 1 and 7. The bath additionally contains citric acid. This meets the aliphatic carboxylic acid limitation of claim 1 and the limitations of claims 8 and 9. Igarashi et al also teach the inclusion of a polyoxyethylene compound as a brightener. An example of this class of compounds is $H\text{-}O\text{-}(CH_2\text{-}CH_2\text{-}O)_nH$ (column 2, line 58). This compound is a nonionic surfactant as recited in instant claim 1 and meets the structural limitation for nonionic surfactants recited in instant claim 10. Another example of a polyoxyethylene compound useful in the bath of Igarashi et al is shown by the formula at column 3, lines 1-3. This structure meets the structural limitation for nonionic surfactants recited in instant claim 11. Thus, Igarashi et al disclose all of the constituents of the bath recited in instant claim 1 except for anionic surfactants.

5. The Wehlage et al patent is directed to electroplating baths for the deposition of metal and metal alloys which contain brightening additives. Preferred metal salts are zinc salts and tin salts (column 6, line 49). Wehlage et al teach that a conventional component of the electroplating baths comprises surfactants or wetting agents, in particular nonionic and ionic surfactants, which act as auxiliary brighteners. This passage suggests that both nonionic and ionic surfactants may both be included in the electroplating bath. Wehlage et al give examples of suitable nonionic surfactants and anionic surfactants. Among the anionic surfactants

suggested are sulfatedalkylphenolethoxyl of the general formula shows at column 7, lines 38-47. This structure meets the structural limitation for anionic surfactants recited in instant claim 12.

6. The Okuhama et al patent is directed to aqueous solutions for the deposition of a metal or metal alloy. The metal plating solutions may contain surfactants. The compounds that can be suitably used as surfactants are the cationic, anionic, nonionic and amphoteric surfactants usually used in plating baths. They are used singly or as a mixture as desired (column 5, lines 1-4). This passage clearly suggests the combined use of different types of surfactants such as anionic and nonionic surfactants.

7. The prior art of record is indicative of the level of skill of one of ordinary skill in the art. It would have been obvious at the time the invention was made to have utilized both nonionic and anionic surfactants in the tin-zinc alloy plating bath of Igarashi et al because nonionic and anionic surfactants are known to be useful constituents in plating baths separately, and Wehlage et al and Okuhama et al suggest the use of more than one type of surfactant in a metal plating bath.

8. Igarashi et al further disclose that at least one aldehyde compound may be added as a co-brightener. One such aldehyde is benzaldehyde (column 2, lines 32-40). This meets the limitations of instant claims 2, 3 and 4. Igarashi et al also disclose that the pH of the tin-alloy bath may range from 4 to 8 (column 2, lines 21-

24). This range falls within the range recited in instant claim 5, and overlaps the range recited in instant claim 6. Choice of a pH value from within the range disclosed by Igarashi et al would have been obvious.

9. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Igarashi et al (4,168,223) in view of Wehlage et al (5,951,841) and Okuhama et al (6,183,545) as applied to claims 1-12 above, and further in view of Meyer et al (5,409,592).

10. Claims 13 and 14 additionally differ from the teaching of Igarashi et al by reciting the inclusion of aromatic and/or heterocyclic carboxylic acids or alkali salts thereof. The Meyer et al patent is directed to additives for a bath containing tin(II) ions. The additives function as antioxidant and also improve throwing power (column 3, lines 49-57). The additive may have a formula illustrate as formula (V) at column 4, lines 45-52 which shows an aromatic carboxylic acid meeting the structural limitations of instant claims 13 and 14. It would have been obvious at the time the invention was made of have included an aromatic carboxylic acid as shown by Meyer et al in tin-zinc bath as suggested by Igarashi et al because oxidation of the tin(II) ions would have been inhibited and throwing power could have been improved.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William T. Leader whose telephone number is 703-308-2530. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached on 703-308-1146. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

William Leader
September 25, 2003

ROY KING
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700